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SRM20/SRMF20

SRM20/SRMF20

Swing Ring Series

SRM20/SRMF20 PLANETARY MIXERS

Maintenance & Parts Manual

Persons under the age of 18 are not permitted to operate or have accessibility to operate this equipment per U.S. Dept. of Labor Employment Standards Administration Fact Sheet No. ESA91-3.

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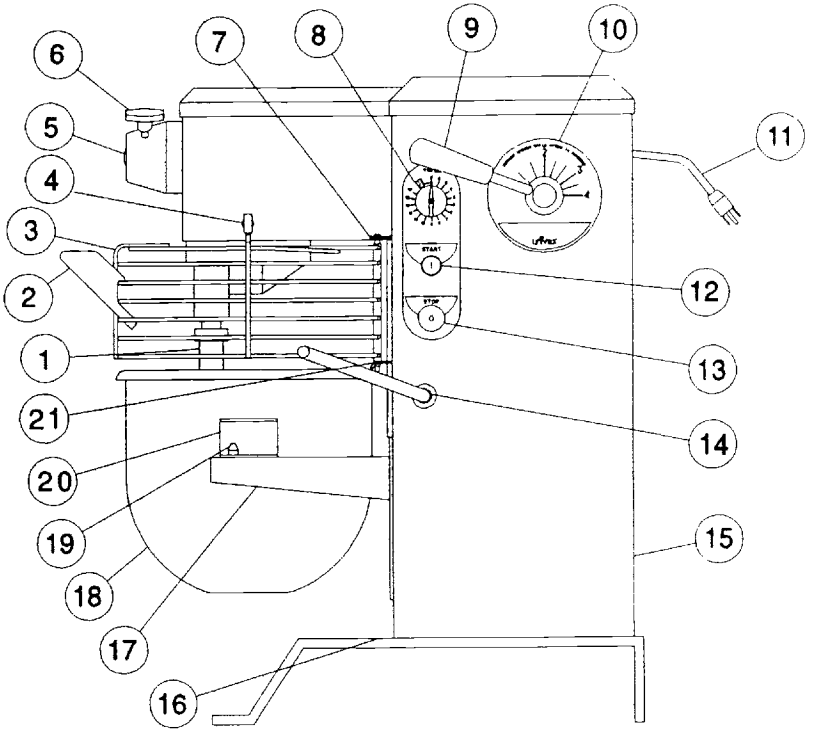
OVERALL VIEW OF FOOD MIXER

Figure 1



1. BEATER SHAFT
2. CHUTE
3. SAFETY RING ASSEMBLY
4. MAGNET
5. NO. 12 HUB
6. THUMB SCREW
7. UPPER MOUNTING BRACKET
8. TIMER (OPTIONAL)
9. SPEED CONTROL LEVER
10. SPEED INDICATOR LABEL
11. CORD
12. START BUTTON
13. STOP BUTTON
14. BOWL LIFT HANDLE
15. REAR ACCESS PANEL
16. SHIPPING BOLT HOLE
17. BOWL SUPPORT
18. BOWL
19. BOWL SUPPORT PIN
20. BOWL MOUNTING BRACKET
21. LOWER MOUNTING BRACKET

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SRM20/SRMF20 TROUBLESHOOTING GUIDE

TROUBLE	POSSIBLE CAUSE	REMEDY
1. Mixer will not operate.	1.1 Electrical service down	1.1 Check electrical service. Replace fuse or reset circuit breaker as necessary.
	1.2 Burned switch contacts	1.2 Replace.
	1.3 Timer not turned on	1.3 Turn timer on.
	1.4 Motor capacitor defective	1.4 Replace
	1.5 Burned out motor	1.5 Remove, test, repair or replace.
	1.6 SAFETY RING not mounted and closed.	1.6 Install SAFETY RING ASSY
	1.7 Bowl not raised	1.7 Raise bowl completely
2. Mixer runs but beater will not turn.	2.1 Speed changed while mixer not running	2.1 While mixer running, move speed control lever slowly forward then back
	2.2 Broken or slipping belt	2.2 Broken or slipping belt
	2.3 Key or Pin sheared on input shaft' input gear, bevel pinion, vertical shaft or beater shaft.	2.3 Locate by step inspection and replace defective part.
3. Slippage of agitator during mixing.	3.1 Loose belts	3.1 Tighten beltb.
	3.2 Mixer bowl is over-loaded	3.2 Readjust contents of bowl per table of contents.
	3.3 Speed is set too high for the mix	3.3 Shift speed lower till action rotates smoothly.
4. Speeds will not change.	4.1 Loose belts	4.1 Tighten or replace
	4.2 Vari-speed pulley inoperable.	4.2 Remove, clean and lubricate or replace.
5. Attachments contact bottom of bowl.	5.1 Dented bowl	5.1 Remove dent or replace bowl.
	5.2 Insufficient clearance between bottom of bowl and beater.	5.2 Readjust bowl lift
	5.3 Misalignment of transmission in relation to bowl support.	5.3 Realign transmission.
6. Excessive noise.	6.1 Gears need to be repacked with grease.	6.1 Locate source by inspection and repack with grease.
	6.2 Badly worn or frayed drive belts.	6.2 Replace belts.
	6.3 Attachments hitting bowl	6.3 Inspect for cause Ref: 5.1 and 5.2.
	6.4 Overloaded mixing bowl.	6.4 Readjust contents of bowl per table of mixing capacities.
7. Difficulty in raising or lowering bowl.	7.1 Lack of adequate lubricant on bowl lift slide assembly and housing.	7.1 Lubricate with grease per Figure 2.

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REMOVAL OF TOP COVER

a. The top cover (Fig. 12 [16]) must be removed in order to perform the maintenance operations. It is secured by a spring clip at its front end and a screw at its rearward end. First, DISCONNECT THE ELECTRICAL POWER FOR SAFETY. Then, remove the screw in the rear (Fig. 12 [20]), lift rear of cover, push forward about 3 inches and lift cover off.

b. Re-install in reverse procedure using care to insure that the cover sits squarely and uniformly on the mixer housing.

MECHANICS MAINTENANCE

Every six months a mechanic should perform the following inspection and maintenance as required:

1. **BELTS**

a. **WARNING:** Start mixer and adjust speed control (Fig. 1 [9]) to speed 4. Stop mixer. **FOR SAFETY' DISCONNECT POWER.**

b. Remove top cover (Fig. 12 [16]) and rear access panel (Fig. 12 [23]).

c. Check belts (Fig. 11 [11 & 21]). If broken, glazed or worn, replace.

d .Check belt (Fig. 11 [11]) for proper tension. The outer edge of the belt should be flush with the outer diameter of the variable speed pulley (Fig. 11 [10]). If not, adjust by loosening the Jam Nut (Fig. 10 [15]) and turning the connecting rod (Fig. 10 [14]) until the outer edge of belt is flush with the outer diameter of the pulley. Retighten Jam Nut.

e. **WARNING:** Plug machine in, start mixer, and adjust speed control to speed 1. Stop mixer. **FOR SAFETY, DISCONNECT POWER.**

f. Check belt (Fig. 11 [21]) for proper tension. The outer edge of the belt should be flush with the outer diameter of the variable speed pulley (Fig. 11 [10]). If not, adjust by loosening nuts (Fig. 11 [13]), holding motor (Fig. 11 [30]). raise or lower the motor until the outer edge of belt is flush with the outer diameter of pulley. Retighten Nuts.

2. **MOTOR**

Check motor (Fig. 11 [30]) for overheating, noise and excessive end play of shaft. Replace if defective.

3. **BOWL LIFT ADJUSTMENT (Fig. 8 and 9)**

a. Place 20 qt. mixing bowl (Fig. 1 [18]) on bowl support and 20 qt. batter beater on beater shaft (Fig. 1 [1]).

b. Raise bowl support to the high position.

c. Check clearance between bottom of bowl and lowest point of batter beater. Clearance should be 3/16 inch, plus or minus 1/16 inch.

d. If adjustment is required, disconnect power, loosen lock nut (Fig. 8 [10]) and turn linkage rod (Fig. 8 [9]) until desired clearance is obtained. Retighten lock nut.

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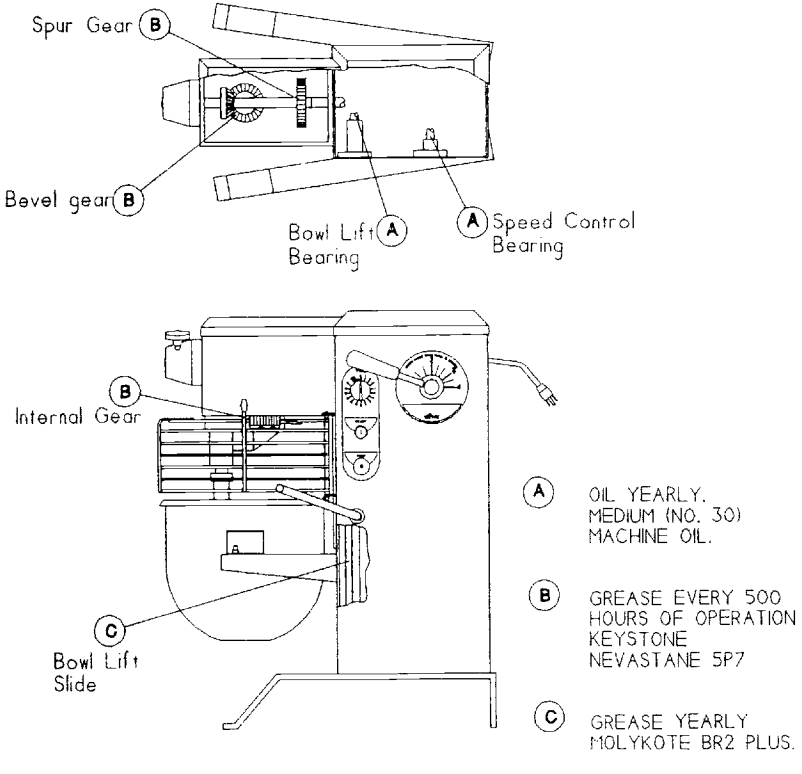
4. LUBRICATION

The lubrication instructions are in Fig. 2. Motors have pre-lubricated bearings with a service interval of ten years. The transmission and beater head gearing are packed with Nevastane 5p7 grease. They must be repacked every 500 hours of operation.

WARNING: NEVER WORK ON THE TRANSMISSION WITH THE MIXER RUNNING. IT IS RECOMMENDED THAT THE ELECTRICAL SERVICE BE DISCONNECTED TO PREVENT ACCIDENTAL START UP.

LUBRICATION INSTRUCTIONS
FIGURE 2


Spur Gear B
Bevel gear B
Bowl Lift Bearing A
A Speed Control Bearing
B Internal Gear
C Bowl Lift Slide
A OIL YEARLY. MEDIUM (NO. 30) MACHINE OIL.
B GREASE EVERY 500 HOURS OF OPERATION KEYSTONE NEVASTANE 5P7
C GREASE YEARLY MOLYKOTE BR2 PLUS.

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REPAIR INSTRUCTIONS

(Including disassembly, replacement and reassemble)

TRANSMISSION (Fig. 3)

Removal

1. **WARNING:** DISCONNECT POWER FOR SAFETY.

2. Remove housing top cover (Fig. 12 [16]).

3. Adjust speed control to low speed, then back to high speed, remove upper retainer bracket (FIG. 11 [15]), and upper V-belt (Fig. 11 [11]) from transmission driven pulley (Fig. 11 [12]). Remove driven pulley.

4. **CAUTION:** Transmission assembly is heavy and must be supported prior to removing. Remove four cap screws (Fig. 3 [10]) securing transmission housing to mixer housing. Remove transmission assembly and place on work bench.

5. Remove transmission cover (Fig. 3 [2]) by sliding toward the rear and lifting up.

6. Rotate gear train by hand and inspect for worn or chipped gears, bent shafts, worn bearings and excessive backlash. Backlash measured at gear teeth exceeding 1/32" is considered excessive. After trouble has been isolated, proceed to disassemble.

Disassembly

1. **Beater Head Assembly** (Fig. 4)

   NOTE: If a gear requires replacement, always replace it's mating gear.

   a. Remove cap screw, left hand thread, (Fig. 4 [12]) and remove beater head assembly using jacking screws (Fig. 4 [9]) if necessary.

   b. Remove drive pin (Fig. 4 [1]), top retaining ring (5), gear (6), key (3), bottom retaining ring (5), retaining ring (7) and press shaft (2) and bearing (4) from housing (10).

   c. Press bearings (4) along with spacer (8) from shaft (2).

2. **Power-Take-Off Assembly** (Fig. 5)

   a. Remove three cap screws (Fig. 5 [8]), washers (6 & 7), deflector (5), retaining ring (3), gear (12), and withdraw assembly from housing (4).

   b. Remove adapter (2), retaining ring (10) and press shaft (13) bearings (9) and gear (11) assembly from housing (4).

   c. Remove pin (17), gear (11), remaining retaining rings (3), key (14) and press bearings (9) from shaft (13).

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3. **Input Assembly** (Fig. 6)

   a. Remove two cap screws (Fig. 6 [10]) and withdraw assembly from transmission.

   b. Remove retaining ring (1), gear (2), keys (5, 7), retaining rings (1) and press shaft (6) and bearing (4) from housing (8).

   c. Remove retaining rings (3) and press bearing (5) from housing (6).

   d. Remove retaining ring (1) and press shaft (6) from bearing (4).

4. **Vertical Shaft Assembly** (Fig. 7)

   a. Remove key (4).

   b. Invert housing on suitable support and press shaft (2) from transmission housing (Fig. 3 [1]).

   c. Remove lower bearing (8) with puller and remove spacer (7).

   d. Remove retaining ring (6) and pull or press upper bearing (5) from transmission housing (Fig. 3 [1]).

   e. Remove pin (3) and press shaft (2) from gear (1).

REASSEMBLE

a. Clean all components except bearings with safety approved cleaning solvent. Inspect components for defects and replace those found to be defective.

   NOTE: All gears should be replaced as sets.

b. If shafts have become slightly scored during the disassembly process, polish the shafts with fine machinist's crocus cloth. Use care to avoid excessive removal of shaft surface or proper fit of components will be lost.

c. Reassembly should be carried out in the reverse of the disassembly procedures stated above. Successful reassembly is very dependent on the cleanliness of all surfaces particularly the bores of housings, gears and bearings as well as the outer surface of shafts. It is well to recheck each component for cleanliness as it is picked up for reassembly. New keys and roll pins should be used on reassembly.

d. Transmission should be progressively checked for smooth operation while on the workbench by hand turning each assembly as it is installed.

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e. Lubrication of the transmission should be done following its installation on the mixer. Apply Keystone Nevastane 5P7 grease to the spur gear and bevel gear meshes. This may be simplified by feeding the grease into the rotating gear meshes. Caution should be exercised to avoid entrapment of the application implement in the gear teeth. Insure the deflector (Fig. 5 [5]) is positioned to dynamically guide the lubrication into the bevel gear mesh.

BOWL SUPPORT ASSEMBLY (Fig. 9)

1. **WARNING:** Disconnect electrical power for safety.

2. Remove housing top cover (Fig. 12 [16]), and rear access panel (Fig. 12 [23]).

3. Remove four cap screws (Fig. 9 [15]) and remove bowl support (Fig. 9 [1]) and slide cover (Fig. 9 [3]).

   CAUTION: Bowl support must be held while screws are being removed in order to prevent it from falling.

4. Reassembly is the reverse procedure.

SLIDE ASSEMBLY (See Fig. 9)

1. Carry out above disassembly procedure for removing bowl support.

2. Remove fixed slide cover (Fig. 12 [6]) by removing two nuts. (Fig. 12 [5])

3. Remove retaining ring (Fig. 9 [8]) from rod end pin (6). Withdraw pin (6) from rod end (7).

4. Remove four kep nuts (Fig. 9 [13]) and withdraw slide frame (5) from housing studs.

5. Remove four cap screws (Fig. 9 [14]) and lift off gibbs (11). Remove slide (10).

6. Clean and inspect sliding surfaces for excessive wear

7. Replace parts showing excessive wear.

8. Lubricate sliding surfaces with grease.

9. Reassemble and reinstall in the reverse of the above procedure.

10. Check clearance between batter beater and bowl per Mechanics Maintenance paragraph 3 a-d and readjust as necessary.

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SPEED CONTROL ASSY. (Fig. 10)

Disassembly

1. Remove housing cover (Fig. 12 [16]) and rear access panel (Fig. 12 [23]).

2. Loosen screw on collar (Fig. 10 [17]). Remove collar rod end (16) and o'ring (Fig 11 [8]) from cam assembly (11). Loosen set screws (10) in cam assembly (11).

3. Drive roll pin (4) from hub (3) and pull hub (3), lever (2), and handle (1) from cam assembly shaft (11). Remove washer (5) from cam assembly (11).

4. Unscrew hub (3) and handle (1) from lever (2).

5. Remove nut (8) and washer (7) from studs holding speed control bearing (6) to housing (Fig. 12 [3]).

6, Withdraw bearing (6) and remaining assembly from housing (Fig. 12 [3]).

7. Pull cam assembly (11) from bearing (6).

8. Remove screws (20), lock washers (21), strap (22), and spring (19) from bearing (6).

9. Remove screws (13) and detent disk (12).

Reassemble

10 Reassemble in reverse of above procedure. Grease cam assembly shaft (11) and detent disk (12) during assembly with MolyKote BR2 Plus or general purpose bearing grease. Adjust belt as described in Mechanics Maintenance 1 paragraph a,d-f.

11 If speed control handle (1) moves while the mixer is running, tighten set screws (10) against spring washer (9) until movement stops.

VARI-SPEED ASSEMBLY (Fig 11)

Disassembly

1. Remove housing cover (Fig. 12 [16]) and rear access panel (Fig. 12 [23]) as described in the cover removal section.

2. Shift handle (Fig. 10 [1]) from fourth speed to first speed and back to fourth speed with the mixer OFF. (Squeezing the belts (Fig. 11 [11 & 21]) together at midspan will help.)

3. Unscrew nut (13) and remove washer (14) and belt retainer (15).

4. Unwrap belt (11) from pulley (12) and withdraw from vari-speed pulley (10).

5. Shift handle (Fig. 10 [1]) to first speed.

6. Unscrew nuts (13). Remove washers (14) and belt retainer (22) from mixer.

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7. Unwrap belt (21) from pulley (27). Withdraw belt (21) from vari-speed pulley (10).

8. Loosen screws on contactor (Fig. 12 [32]) which secure motor cord power leads (34). Remove nut (38), lock washer (37) and motor cord ground lead from weld stud. Remove nuts (38), washers (36) and cord clamps (35).

9. Remove nuts securing motor (30) and lift motor from mixer. Loosen set screw (28) and slide pulley (27) and key (29) off motor shaft.

10. Remove two screws securing connection box plate on rear end of motor. Remove green grounding screw securing motor cord (33) ground lead. Pull cord leads from motor terminals.

11. Loosen jam nut (Fig. 10 [15]). Loosen set screw on collar (Fig. 10 [17]). Slide collar and rod end (Fig. 10 [16]) off cam assy. (Fig. 10 [11]). Unscrew rod end (Fig. 10 [16]) and jam nut (Fig. 10 [15]) from connecting rod (Fig. 11 [17]). Unscrew connecting rod from rod end (Fig. 11 [7]).

12. Remove nuts (13) and washers (14). Withdraw vari-speed pulley assy. from mixer housing.

13. Loosen the two set screws on each vari-speed pulley (10) and remove from shaft (9). Remove woodruff keys (16) and retaining rings (1) from shaft. Drive shaft (9) from pulley swivel bracket (4). Press remaining ball bearings (2) from shaft (9) and from swivel bracket (4). Remove retaining rings (3) from swivel bracket.

14. Remove retaining rings (6) from rod end pin (5) and bracket swivel pin (20). Drive pins (20 & 5) from swivel bracket (4) and swivel bracket base (18).

Reassemble

15. Reassemble in reverse of above procedure. Adjust belts as described in Mechanics Maintenance 1 paragraph a,d-f.

16. Adjust upper and lower belt retainers (15 & 22) 1/8" from outer belt surface.

HOUSING (Fig 12)

For the remaining parts which have not been discussed pertain to electrical components and the housing, Figures 12, 13A, 13B, and 13C should provide adequate guidance for the disassembling and reassembling of these parts.

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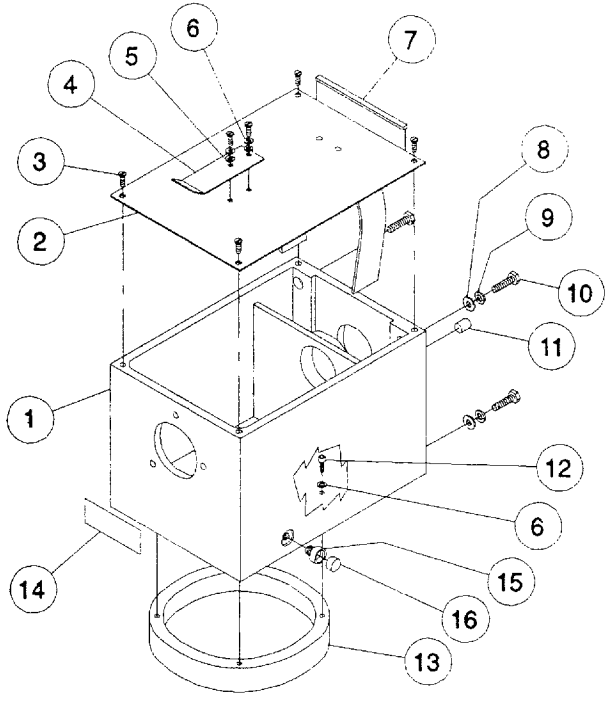
TRANSMISSION
FIGURE 3

ILLUS.	PART NO.	DESCRIPTION	QTY.
1.	1024434	Transmission Housing	1
2.	1024117	Transmission Cover	1
3.	1200012	Phillips Hd. Screw 10-32 x 1/2	6
4.	1024041	Spring Clip	1
5.	1200076	Steel Flat Washer #10	2
6.	4400065	Split Lock Washer #10	6
7	8800022	Foam Strip	1
8.	1200084	Steel Flat Washer 1/2	4
9 .	1200085	Split Lock Washer 1/2	4
10	1200057	Socket. Hd. Cap Screw 1/2-20 x 1	4
11.	4400194	Dowel Pin 1/4" O.D. x 1/2" LG	2
12.	1200440	Hex Hd. Cap Screw 10-32 x 1	4
13.	1020011	Internal Gear	1
14.	4400342	Label, Univex SRM20)	1
	4400343	Label, Univex (SRMF20)	1
15	1012438	Holder, Magnet	2
16	1012439	Magnet	2



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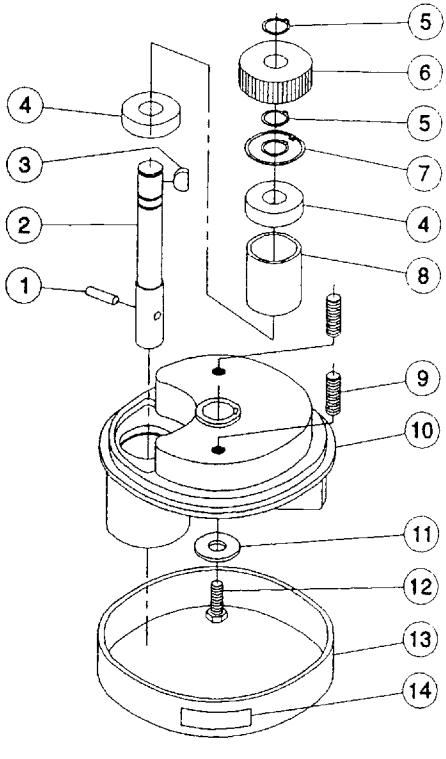
BEATER HEAD ASSEMBLY
FIGURE 4

ILLUS.	PART NO.	DESCRIPTION	QTY.
	1023075	Beater Head Assembly	1
1	1200381	Drive Pin 3/8" x 1-1/4"	1
2	1023014	Beater Head Shaft	1
3	1200113	Woodruff Key #9	1
4	1030019	Ball Bearing 6204LL	2
5	1200119	Retaining Ring, External	3
6	1012003	Beater Head Gear	1
7	1200117	Retaining Ring, Internal	1
8	1012012	Beater Head Spacer	1
9	8900038	Set Screw	2
10	1020106	Beater Head Casting	1
11	4400499	Washer 7/16" x 1-1/8" x 5/64"	1
12	1200051	Hex. Hd. Cap Screw 3/8-24 x 1-1/4" L.H.	1
13	1020002	Splash Ring	1
14	4400269	Label, Rotation	1



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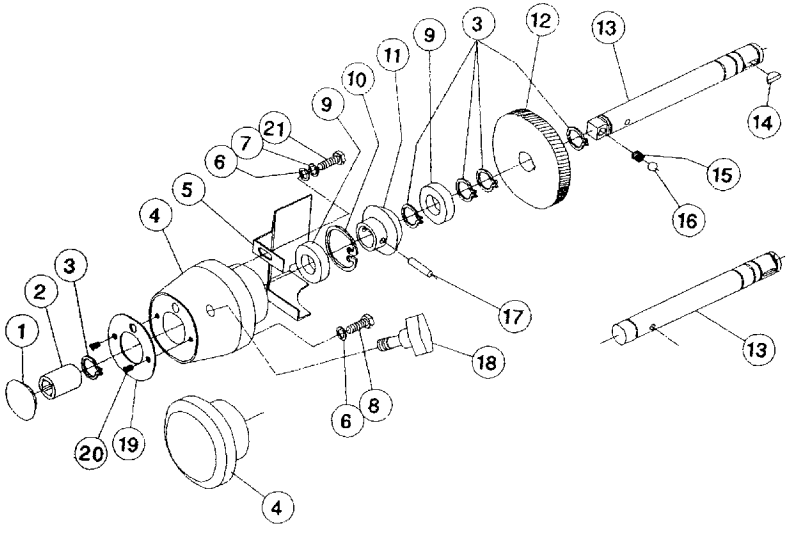
POWER TAKE OFF ASSEMBLY
FIGURE 5

ILLUS.	PART NO.	DESCRIPTION	QTY
1.	8800033	Cover, P.T.O. (With PTO)	1
2.	8800012	Adapter, Attachment (With PTO)	1
3.	1200119	Retaining Ring, External	5
4.	4400030	Housing, P.T.O. (With PTO)	1
	1012446	Housing, (Without PTO)	1
5	1024417	Deflector, Lubrication	1
6.	4400005	Washer, Lock 1/4	3
7.	1200075	Washer, Flat 1/4	1
8.	1200025H	Screw, Hex Hd. Cap 1/4-20 x 3/4	2
9.	1030019	Ball Bearing 6204 LL	2
10.	1200117	Retaining Ring, Internal	1
11.	1030031	Bevel Gear, Pinion Only	1
12	1020004	Spur Gear	1
13.	1021016	Shaft, P.T.O. (With PTO)	1
	1024420	Shaft, (Without PTO)	1
14.	1200113	Woodruff Key #9	1
15.*	4400006	Spring, P.T.O. Shaft (With PTO)	1
16.*	4400016	Ball, P.T.O. Shaft (With PTO)	1
17.	1200103	Roll Pin 5/16" x 1-1/4"	1
18.	4400229	Knob Assy, P.T.O. (With PTO)	1
19.	4400210	Washer, P.T.O.	1
20.	8900019	Screw SFHD 6-32 x 3/8	2
21.	1200022H	Screw, Hex Hd. Cap 1/4-20 x 1"	1

* Not available - Part of P.T.O. Shaft Illus NO. 13



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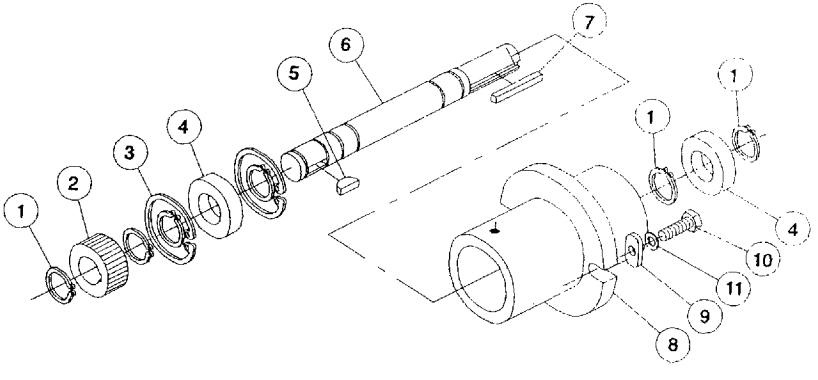
INPUT ASSEMBLY
FIGURE 6

ILLUS.	PART NO.	DESCRIPTION	QTY.
	1021036	Input Assembly	1
1.	1200119	Retaining Ring, External	6
2	1020010	Spur Gear, Input Pinion Only	1
3.	1200117	Retaining Ring, Internal	2
4.	1030019	Ball Bearing 6204LL	2
5.	1200113	Woodruff Key #9	1
6	1024186	Input Shaft	1
7.	4400230	Key 3/16" sq. x 1-1/2" lg.	1
8.	1030017	Input Housing	1
9.	4400003	Steel Flat Washer 1/4 I.D.	2
10.	1200022H	Hex. Hd. Cap Screw 1/4-20 x 1	2
11.	4400005	Lock Washer, 1/4	2



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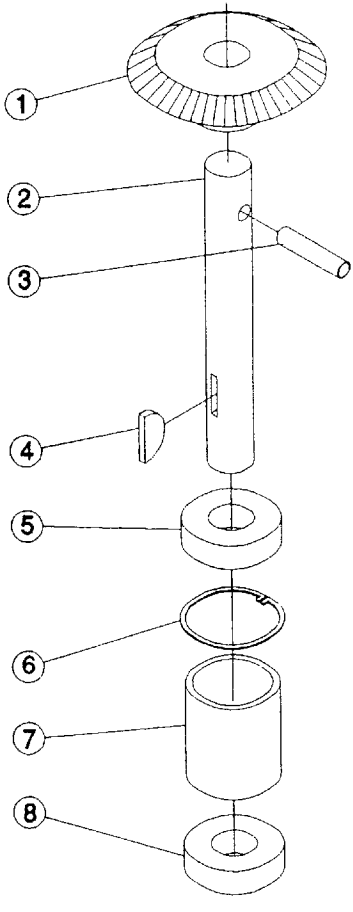
VERTICAL SHAFT ASSEMBLY
FIGURE 7

ILLUS.	PART NO.	DESCRIPTION	QTY.
1	1020215	Bevel Gear	1
2	1012434	Vertical Shaft	1
3	4400022	Roll Pin 5/16" x 1-1/2"	1
4	1200113	Woodruff Key #9	1
5	1030035	Ball Bearing 63204 ZZ	1
6	1200117	Retaining Ring, Internal	1
7	1020009	Vertical Spacer	1
8	1030019	Ball Bearing 6204 LL	1



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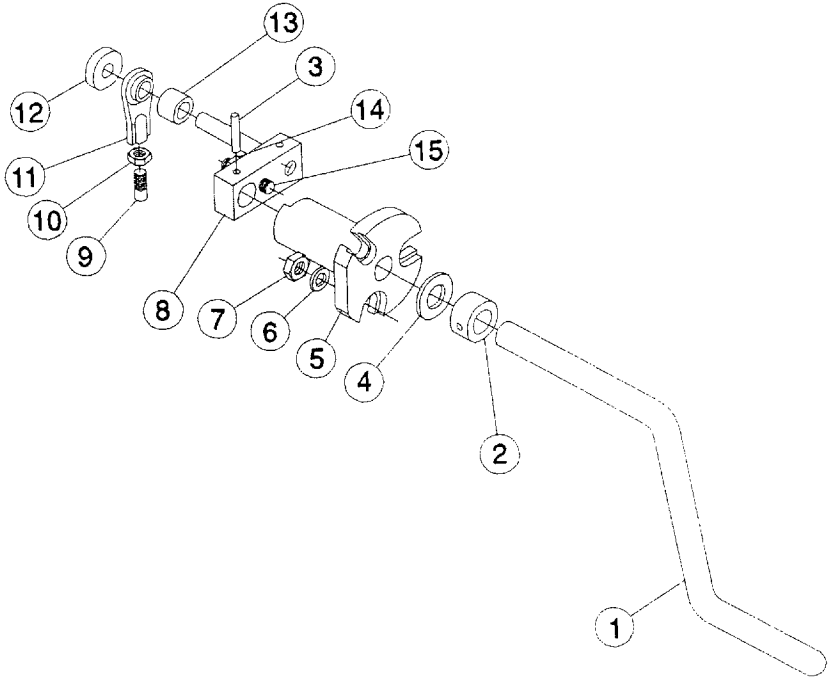
BOWL LIFT ASSEMBLY
FIGURE 8

ILLUS.	PART NO.	DESCRIPTION	QTY.
1	1024512	Lever, Bowl Lift (SRMF20 ONLY)	1
	1025446	Lever, Bowl Lift (SRM20 ONLY)	1
2***	1012350	Collar, Bowl Lift	1
3	4400118	Roll Pin 1 x 3/16"	1
4	1200301	Nylon Washer 5/8	1
5	1012133	Bowl Lift Bearing	3
6	4400127	Steel Flat Washer 3/8	3
7	1200063	Kep Nut 5/16-18	1
8 **	1024012	Cam Assembly (includes items 14 & 15)	1
9 *	1023053	Connecting Rod	1
10	1200155	Hex Nut 3/8-24	1
11	1012201	Rod End, 3/8-24 R.H.	1
12	1020441	Collar & Set Screw	1
13	1030318	Spacer, Nylon 3/8	1
14	1200435	Reversible Lock nut 5/16-24	1
15	1200434	Set Screw 5/16-24 x 1 1/8	1

* Part No. 1023053 is broken in half in Figure 9. It is actually one piece and only one is needed for bowl lift.
** Includes items 14 and 15.
*** Comes with Set Screw 10-32 x 3/4LG.



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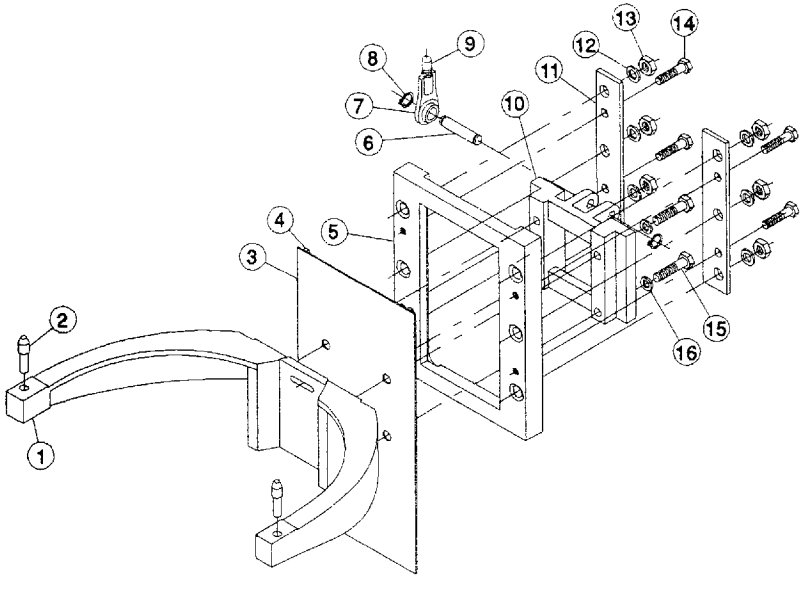
BOWL SUPPORT ASSEMBLY
FIGURE 9

ILLUS.	PART NO.	DESCRIPTION	QTY.
1	1021028	Bowl Support	1
2	4400219	Pin, Bowl Support	2
3	1021019	Slide Cover, Movable	1
4	4400278	Gasket Strip	2
5	1012190	Frame, B.L.	1
6	1012181	Pin, Rod End	1
7	1012202	Rod End 3/8-24 L.H.	1
8	1200311	Retaining Ring, External	2
9 *	1023053	Connecting Rod, B.L.	1
10	1012189	Slide, B.L.	1
11	1012191	Gibb, B.L.	2
12	4400127	Steel Flat Washer 3/8	4
13	1200063	Kep Nut 5/16-18	4
14	1200039	Hex Hd. Cap Screw 5/16-18 x 3/4	4
15	4400178	Hex Hd. Cap Screw 5/16-18 x 1-1/2	4
16	1200077	Lock Washer 5/16	4
17	1020091	Bowl (Not Shown)	1

Same part as ILLUS. NO. 9 in Figure 8.



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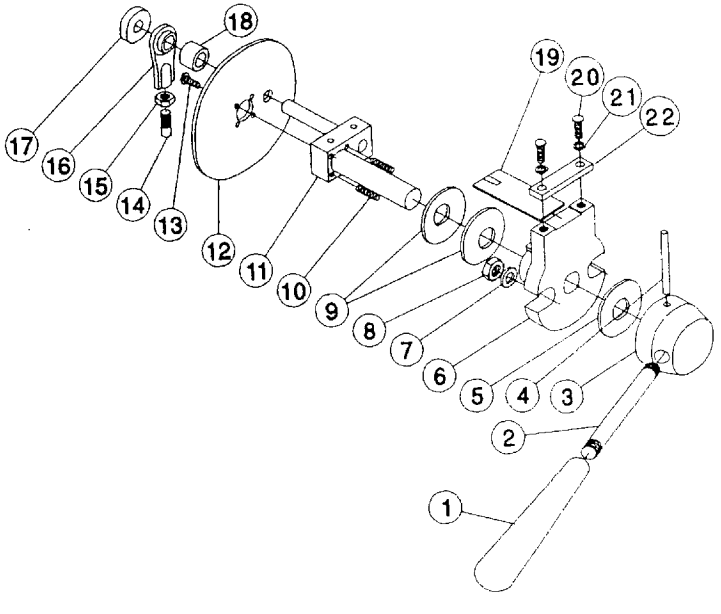
SPEED CONTROL ASSEMBLY
FIGURE 10

ILLUS.	PART NO.	DESCRIPTION	QTY.
1	4400202	Handle	1
2	1020066	Lever, S.C.	1
3	1012137	Hub, S.C.	1
4	1200300	Roll Pin 3/16" x 2"	1
5	1200301	Nylon Washer 5/8	1
6	1020068	Speed Control Bearing	1
7	4400127	Steel Flat Washer 3/8	2
8	1200063	Kep Nut 5/16-18	2
9	1200156	Spring Washer 5/8	2
10	1200304	Set Screw 10-32 x 3/4	2
11	1020069	Cam Assy, S.C.	1
12	1023222	Detent Disk	1
13	1200471	Screw Hex Soc Hd 10-32 x 1/2	2
14 *	1030223	Connecting Rod, S.C.	1
15.	1200155	Hex Nut 3/8-24	1
16	1012201	Rod End 3/8-24 R.H.	1
17	1020441	Collar & Set Screw	1
18	1030318	Spacer, Nylon 3/8" ID	1
19	1023223	Spring, S.C.	1
20	4400208	Phillips Pan Hd. Screw 1/4-20 x 1/2	2
21	4400005	Lock Washer 1/4	2
22	1023225	Strap, S.C.	1

* Part No. 1030223 is also shown in Figure 11. It is actually one piece and only one is needed for speed control, vari-speed assembly.



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VARI-SPEED ASSEMBLY
FIGURE 11

ILLUS.	PART NO.	DESCRIPTION	QTY.
1	1200119	Retaining Ring, External	2
2	1030019	Ball Bearing 6204LL	2
3	1200117	Retaining Ring, Internal	2
4	1030167	Pulley Swivel Bracket	1
5	1012181	Rod End Pin	1
6	1200311	Retaining Ring, External	4
7	1012202	Rod End 3/8-24 L.H.	1
8	4400009	Rubber "O" Ring 3/16" x 4"	1
9	1021022	Vari-Speed Shaft	1
10	1020061	Vari-Speed Pulley (Comes with (2) 1/4-20x3/8 set screws)	2
11	1020501	Cog Belt	1
12	1020500	Pulley, Driven (Comes with 5/16-18x3/8 set srew)	1
13	1200063	Kep Nut 5/16-18	10
14		Reserved	
15	1023240	Belt Retainer, Upper	1
16	1200113	Woodruff Key #9	2
17 *	1030223	Connecting Rod, S.C.	1
18	1030216	Swivel Bracket Base	1
19	1200083	Steel Flat Washer 3/8	4
20	1030191	Bracket Swivel Pin	1
21	1020502	Cog Belt	1
22	1023220	Bracket, Belt Retainer	1
23	4400127	Steel Flat Washer 3/8	8
24	1200413	Hex Hd. Cap Screw 1/4-20 X 1-1/2	1
25	1200075	Washer, Flat 1/4	1
26	1023219	Roller	1
27	1021030	Pulley, Drive (Comes with 5/16-18x1/4 set screw)	1
28		Reserved	
29	4400230	Key, 3/16" sq. x 1-1/2"	1
30	1025024	Motor, 1/2HP, 115V/230V, 60HZ, 1PH (Includes item 29)	1
	1020024A	Motor, 1/2HP, 220V-240V, 50HZ, 1PH, (Includes item 29) 100V, 50/60HZ, 1PH	1
	1020026	Motor, 1/2HP, 380V,50HZ,3PH (For Europe Only) (Includes item 29)	1
31	1020218	Motor Mount SRM20 Only	1
32	7100107	Strain Relief	1
33	8800200	Cord, Electric 115V, 60HZ, 1PH 100V, 50/60HZ, 1PH	1
	8800201	Cord, Electric 230V, 60HZ, 1PH 220-240V, 50HZ, 1PH	1
	8800102	Cord, Electric 230V, 50HZ, 1PH (CE)	1
	7100100	Cord, Electric 220/380V, 50HZ, 3PH 400V, 60HZ, 3PH, 400V, 50HZ, 3PH, (British & CE)	1
	8800101	Cord, Electric 230V, 50HZ, 1PH, (British)	1
34	8800203	Cord, Motor 1PH	1
	8800226	Cord, Motor 3PH	1
35	4400101	Clamp, Cord	3
36	1200076	Washer, Flat #10	2
37	4400065	Lock Washer #10	2
38	1200060	Hex Nut, 10-32	6
39	4400398	Tie Wrap (Not Shown)	1
40	4400141	Nut, Kep 1/4-20	1

* Same part as ILLUS. NO. 4 in Figure 10.

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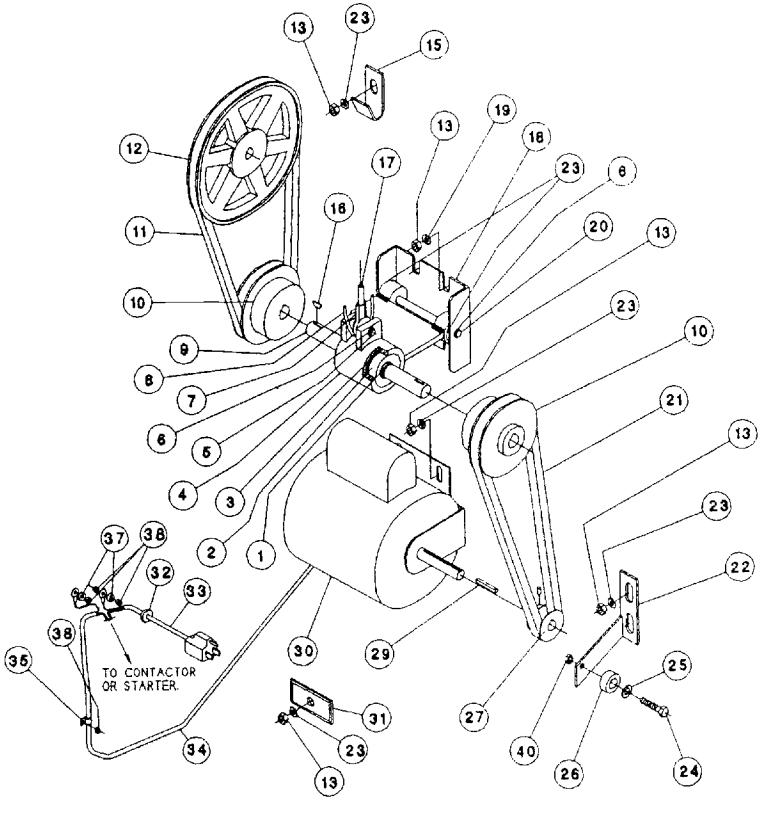
VARI-SPEED ASSEMBLY
FIGURE 11



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HOUSING ASSEMBLY, FIGURE 12

,LUS.	PART NO.	DESCRIPTION	QTY.
1		RESERVED	
2	1029610	Cap, Leg	4
3	1024437	Mixer Housing, SRM20	1
	1024438	Mixer Housing, SRMF20	1
4	1200076	Steel Flat Washer #10	10
5	1200060	Hex Nut 10-32	10
6	1024435	Fixed Slide Cover	1
7	7100123	Switch, Guard	2
8	4400413	Bolt, Carr 1/4-20 X 3/4 SS	4
9	4400003	Spacer	4
10	1012441	Bracket, Upper	2
11	4400141	Nut, Kep 1/2-20	4
12	4400001	Nut, Tinnerman	1
13	1200092	Washer, Flat #8	2
14	4400183	Washer, Lock #8	2
15	1200008	Screw, 8-32 x 3/8" PPHD	2
16	1024126	Housing Cover	1
17	4400114	Label, To Lift Cover (NOT FOR EUROPE)	1
18	4400113	Label, Stop Unplug (NOT FOR EUROPE)	1
19	1024042	Spring, Top Cover	1
20	1200422	Screw Sheet Metal #12 PPHD 1" LG.	1
	1200451	Screw (Security Option)	1
21	1200433	Nut, Elastic Stop 4-40	2
22	4400065	Lock washer #10	4
23	1024024	Rear Access Panel, SRM20	1
	1024111	Rear Access Panel, SRMF20	1
24	8800022	Rubber Strip	6 ft
25	1200012	Phillips Hd. Screw 10-32 x 1/2	7
	1200452	Screw (security Option)	7
26	7100023	Insulation Barrier	1
27	1200432	Screw, Hex HD 4-40 x 3/4	2
28	7100103	Switch, Guard	1
29	1024411	Bracket, Bowl Switch	1
30	4400349	Label, Speed Control	1
31	7100010	Mount, Contactor	1
32	7100011	Contactor 115V/60HZ/1PH	1
	7100012	Contactor 208-230V/60HZ/1PH, 220V/50HZ/1PH	1
	7100013	Contactor 240V/50HZ/1PH	1
	7100015	Contactor 100V/50-60HZ/1PH	1
	7100040	Starter 115V, 60HZ, 1PH (Canadian use only)	1
	1033327	Starter 380-400V,50HZ, 3PH (For Europe Only)	1
	7100108	Starter 220-240V,50HZ,1PH (For Europe Only)	1
33	7100101	Push Button, Start	1
34	7100102	Push Button, Stop	1
35	1024430	Safety Ring, Right Side (Not Shown)	1
36	1024431	Safety Ring, Left Side (Not Shown)	1
37	1000541	Chute (Not Shown)	1
38	4400310	Decal. Start/Stop	2
	4400311	Decal, Start/Stop/Timer (optional)	1
39	1012442	Bracket, Lower	1
40	4400081	Screw, Drive	4
41	4402017	Screening	1
42		Reserved	
43	7100027	Timer, 15 min.	1

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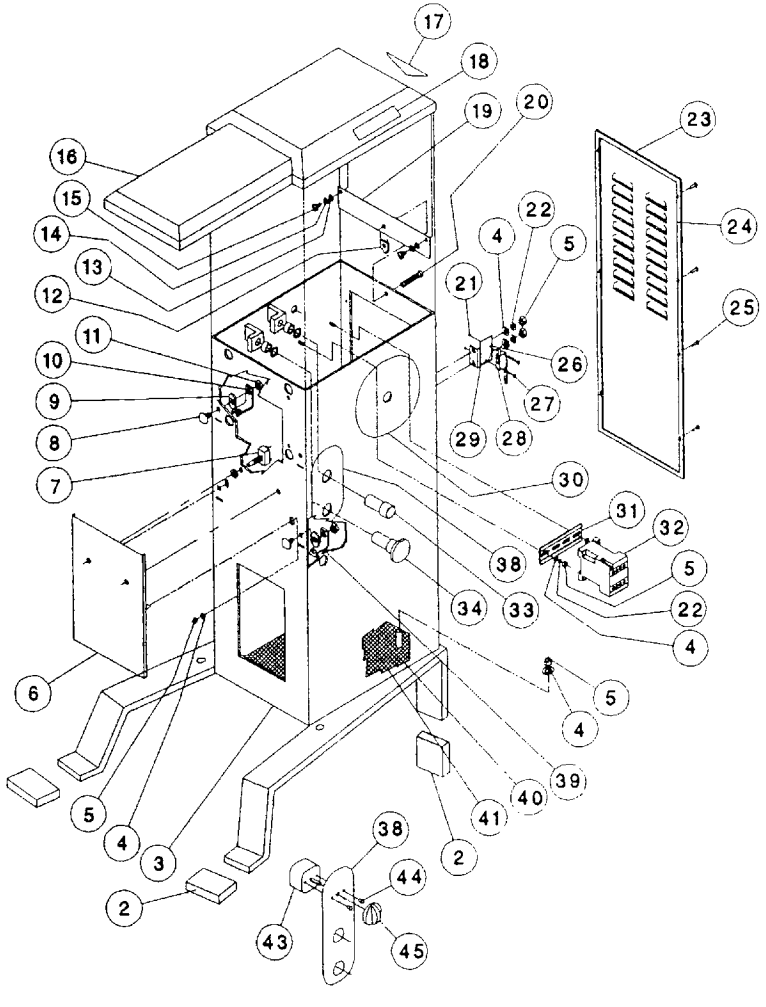
44	4400079	Screw CHZ HD M4-.7mm x 6mm LG	2
45	7100028	Knob, Timer	1
46	1033326	Transformer, Control, 380V/50HZ/3PH (NOT SHOWN)	1
47	4400171	Bushing, (Not Shown)	3
48	1200022H	Screw 1/4-20 X 1 (For Europe Only) (Not Shown)	1
49	4400057	Nut 1/4-20 (For Europe Only) (Not Shown)	2
50	4400005	Lockwasher 1/4 (For Europe Only) (Not Shown)	1
51	1200450	Tool Kit (Security Option)	1
52	1024430	Safety Ring Right Side (Not Shown)	1
53	1024431	Safety Ring Left Side (Not Shown)	1

HOUSING ASSEMBLY
FIGURE 12



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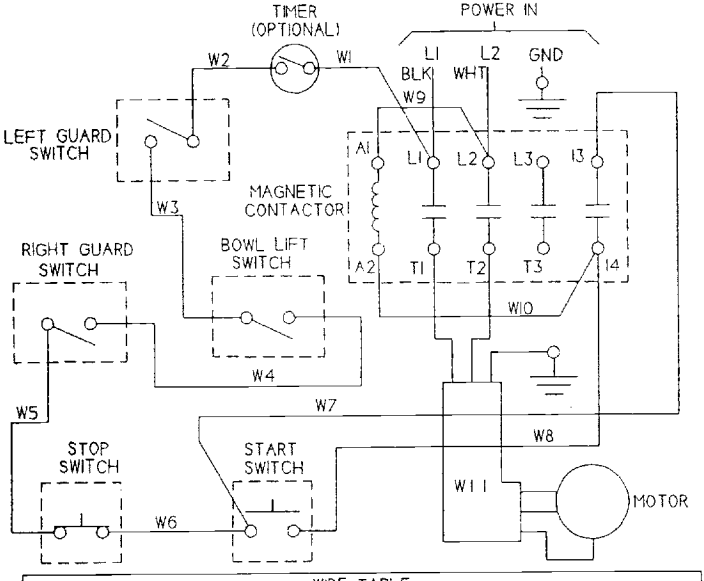
WIRING DIAGRAM 115/208-230V, 60HZ, 1PH
220-240V, 50HZ, 1PH
100V, 50/60HZ, 1PH
FIGURE 13A



WIRE TABLE

PART NUMBER	WIRE NO.	GA	SEE NOTE	LENGTH IN INCHES	END A SEE NOTE	END B SEE NOTE	COLOR
	W1	16	3				
	W2	16	3				
	W1 W/O TIMER	16	3	21	1	2	WHITE
	W3	16	3	4	2	2	BLACK
	W4	16	3	7	2	2	WHITE
8800221	W5	16	3	4	1	2	RED
	W6	16	3	2 1/2	1	1	RED
	W7	16	3	26 1/2	1	1	BLACK
	W8	16	3	30	1	1	RED
	W9	16	3	2 1/2	1	1	RED
	W10	16	3	2 1/2	1	1	RED
8800203	W11						

NOTES: 1. ATTACH DOUBLE CRIMP FERRULE.
2. ATTACH DOUBLE CRIMP 1/4" FEMALE QUICK DISCONNECT FULLY INSULATED.
3. MATERIAL: 1015 TEW CSA AND UL APPROVED.

IMPORTANT: Before making electrical connections, check the specifications on the data plate (located on the rear access panel) to assure they agree with those of your electrical service.

WARNING: Whenever maintenance is being performed or whenever the top cover or rear access panel have been removed, DISCONNECT electrical cord and place a tag on it indicating the mixer is being worked on.

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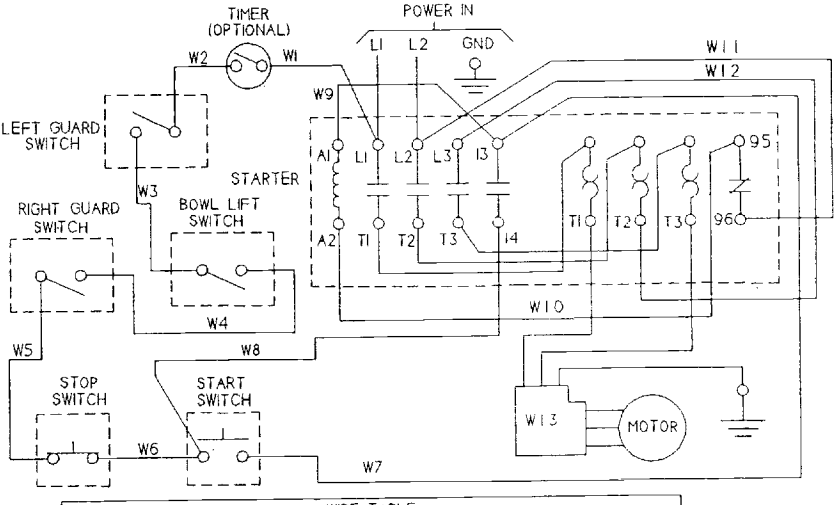
WIRING DIAGRAM 115V, 60HZ, 1PH
FOR CANADIAN ONLY
220-240, 50HZ, 1PH FOR EUROPE ONLY
FIGURE 13B



WIRE TABLE							
PART NUMBER	WIRE NO.	GA	SEE NOTE	LENGTH IN INCHES	END A SEE NOTE	END B SEE NOTE	COLOR
	WI	16	3				
	W2	16	3				
	WI W/O TIMER	16	3	21	1	2	WHITE
	W3	16	3	4	2	2	BLACK
	W4	16	3	7	2	2	WHITE
8800221	W5	16	3	4	1	2	RED
	W6	16	3	2 1/2	1	1	RED
	W7	16	3	26 1/2	1	1	BLACK
	W8	16	3	30	1	1	RED
	W9	16	3	2 1/2	1	1	RED
	WI0	16	3	2 1/2	1	1	RED
	WII	16	3	10	1	1	RED
	WI2	16	3	10	1	1	BLACK
8800203	WI3						

NOTES: 1. ATTACH DOUBLE CRIMP FERRULE.
2. ATTACH DOUBLE CRIMP 1/4" FEMALE QUICK DISCONNECT FULLY INSULATED).
3. MATERIAL: 1015 TEW CSA AND UL APPROVED

IMPORTANT: Before making electrical connections, check the specifications on the data plate (located on the rear access panel) to assure they agree with those of your electrical service.

WARNING: Whenever maintenance is being performed or whenever the top cover or rear access panel have been removed, DISCONNECT electrical cord and place a tag on it indicating the mixer is being worked on.

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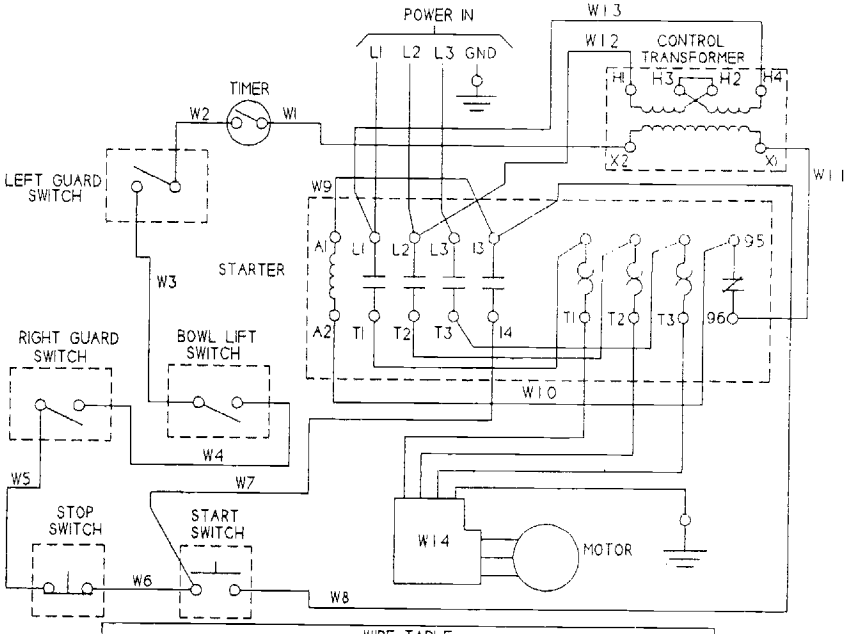
WIRING DIAGRAM
380-400V, 50HZ, 3PII
FIGURE 13C (For Europe Only)



WIRE TABLE

PART NUMBER	WIRE NO.	GA.	SEE NOTE	LENGTH IN INCHES	END A SEE NOTE	END B SEE NOTE	COLOR
	W1	16	3				
	W2	16	3				
8800221	W1 W/O TIMER	16	3	21	1	2	WHITE
	W3	16	3	4	2	2	BLACK
	W4	16	3	7	2	2	WHITE
	W5	16	3	4	1	2	RED
	W6	16	3	2 1/2	1	1	RED
	W7	16	3	26 1/2	1	1	BLACK
	W8	16	3	30	1	1	RED
	W9	16	3	2 1/2	1	1	RED
	W10	16	3	2 1/2	1	1	RED
	W11						
	W12						
	W13						
8800226	W14	CORD					

NOTES: 1. ATTACH DOUBLE CRIMP FERRULE.
2. ATTACH DOUBLE CRIMP 1/4" FEMALE QUICK DISCONNECT FULLY INSULATED.
3. MATERIAL: 1015 TEW CSA AND UL APPROVED.

IMPORTANT: Before making electrical connections, check the specifications on the data plate (located on the rear access panel) to assure they agree with those of your electrical service.

WARNING: Whenever maintenance is being performed or whenever the top cover or rear access panel have been removed, DISCONNECT electrical cord and place a tag on it indicating the mixer is being worked on.

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